Targeting High-Risk Communities in Region 5 Using a Combined Sewer Overflow Database and Mapping Project

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Combined sewer overflows (CSOs) discharge untreated sanitary and storm wastewater from a combined sewer system directly to receiving waters during wet weather. CSO discharges require a National Pollutant Discharge Elimination System (NPDES) Permit and are regulated by the Clean Water Act through the U.S. Environmental Protection Agency (U.S. EPA).

Region 5 has the heaviest concentration of CSOs anywhere in the U.S. The WECAB in Region 5 developed a tool through collaboration that identifies the CSO communities that pose the greatest potential risk to human health and the environment.

To focus limited resources on the most serious environmental issues caused by CSOs, the WECAB designed a CSO database that targeted towns with combined sewer systems. The NPDES Permit number and location of the facility were entered into a basic database worksheet using the program Lotus Approach. We collaborated with local and state governments and populated the database according to the following criteria: (1) whether surface water is used as a drinking water source for the town or any communities downstream from a CSO, (2) whether the CSOs were discharging to waters on the 303(d) Lists of Impaired Water Bodies, and (3) whether high-priority beaches are downstream from a CSO. Based on these criteria, we were able to prioritize which CSO communities should be inspected, as each CSO event may have a large impact on human health and water quality standards. This information was incorporated into the database and later used for tables and reports that would be integrated with the mapping project. The mapping project was a visual representation of the database, which used Geographic Information Systems mapping layers to color-code and distinguish CSO communities.

By using this data, we were able to target and prioritize CSO communities that are potentially the most likely to have an adverse effect on human health and the environment. By mapping the data, we were able to effectively communicate to federal and state decision-makers which CSO communities posed a potential risk to human health and the environment. By implementing CSO Control Policy in these high-risk communities, we are able to further improve the mission of this agency and our long-term vision for clean and safe water.